

REMARKS

Claims 1-16 currently remain in the application. None of the claims is herein amended.

Claims 1-16 were rejected under 35 U.S.C. 102 as anticipated by or, in the alternative, under 35 U.S.C. 103 as obvious over Arfaei '465 or '014 and Fry. None of the graft copolymers described in any of these references, however, is of the structure as required of the graft copolymers described in claim 1 of the present application or has the effects obtainable of the graft copolymers according to the present invention, and hence the rejection should be withdrawn.

Graft copolymers are of a structure having a main chain to which a plurality of branches (so-called side chains or graft chains) are attached. Graft copolymers in claim 1 are characterized as having a main chain comprised of copolymer of maleic anhydride and a monomer shown by Formula 1 and the branches comprised of polyether compounds shown by Formula 2.

Graft copolymers according to Arfaei '465, by contrast, do not have such a structure because their main chain part comprises polyether and their branch parts comprise polymers of ethylenically unsaturated monomers (column 10, lines 38-44). Explained more in detail, graft copolymers according to Example 1 are characterized as having a main chain part comprised of oxyethylene-oxypropylene copolymers and branch chain parts comprised of polymers of acrylic acid (column 7, line 58 to column 8, line 7). Graft copolymers of Example 4 have a main chain part comprised of oxyethylene polymers and branch chain parts comprised of polymers of acrylic acid (column 8, lines 27-38). Graft copolymers of Example 6 have a main chain part comprised of oxypropylene polymers and branch chain parts comprised of polymers of acrylic acid (column 9, lines 9-19).

Graft copolymers according to Arfaei '014 are similarly characterized, having a main chain part comprised of polyether and branch chain parts comprised of ethylenically unsaturated monomers (column 10, lines 23-30). Explained more in detail, graft polymers in Examples 1, 4 and 6 of Arfaei '014 are similar respectively to those in Examples 1, 4 and 6 of Arfaei '465.

Graft copolymers according to Fry have a main chain part comprised of one or more

selected from the group consisting of derivatized cellulose, polyvinyl alcohol, polyethylene oxide and polypropylene oxide and branch chain parts comprised of one or more selected from the group consisting of 2-acrylamido-2-methylpropanesulfonic acid, acrylonitrile, N,N-dimethylacrylamide, acrylic acid and N,N-dialkylaminoethylmethacrylate (column 14, lines 29-47). Explained more in detail, Table I of Example 1 includes the description of a graft copolymer having a main chain part comprised of polyvinyl alcohol and branch chain parts comprised of 2-acrylamido-2-methylpropanesulfonic acid (AMPS) and N,N-dialkylaminoethylmethacrylate (DMAEMA). Table II of Example 2 shows another graft copolymer having a main chain part comprised of lignites and branch chain parts comprised of 2-acrylamido-2-methylpropanesulfonic acid (AMPS), acrylonitrile (ACN) and N,N-dimethylacrylamide (DMA).

In summary, none of the cited references discloses any graft copolymer having the structure of graft copolymers characterized in claim 1 of the present application.

In order to demonstrate that the favorable effects obtainable according to the present invention cannot be attained by using graft copolymers according to these cited references, gypsum slurry compositions as shown in Table 2 in the specification were prepared and their properties were evaluated. The results are shown in Table 2a below.

Table 2a

	Graft copolymer substance		Water/gypsum ratio (%)	Flow value (mm)	Flowrate increase (%)	Air content (%)	Compressive strength (N/mm ²)	Flexural strength (N/mm ²)
	Kind	Ratio						
Example 1	R-8	0.04	50	144	12.5	2.5	9.4	2.9
2	R-9	0.04	50	155	21.1	1.8	9.6	3.0
3	R-10	0.04	50	131	2.3	3.5	8.9	2.8
4	R-11	0.04	50	135	5.5	3.4	8.6	2.8
5	R-12	0.04	50	130	1.6	3.5	8.8	2.8
6	R-8	0.3	35	142	42.0	2.6	17.6	3.5
7	R-9	0.3	35	150	50.0	1.7	18.5	3.6
8	R-10	0.3	35	129	29.0	3.4	17.3	3.3
9	R-11	0.3	35	110	10.0	3.6	16.2	3.2
10	R-12	0.3	35	112	12.0	3.3	16.9	3.4

where:

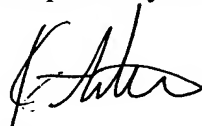
- R-8: Graft copolymer in Example 1 of Arfaei '465 and '014;
- R-9: Graft copolymer in Example 4 of Arfaei '465 and '014;
- R-10: Graft copolymer in Example 6 of Arfaei '465 and '014;
- R-11: Graft copolymer in Example 1 of Fry; and
- R-12: Graft copolymer in Example 2 of Fry.

A comparison between Test Examples of Table 2 and the examples in Table 2a above shows clearly that the favorable effects of the present invention (Test Examples) cannot be obtained by using graft copolymers of the cited references. If the Examiner so requires, the experimental results shown in Table 2a will be re-submitted in the form of a declaration.

It is to be noted that even if the experimental results of Table 2a are ignored because they are not presented in the form of a signed declaration, the argument presented above regarding the difference in structure between the graft copolymers according to the present invention and those described by the cited references will convince the Examiner that these cited references cannot predicate the Examiner's rejection of the claims in the present application.

In summary, it is believed that the application is in condition for allowance.

Respectfully submitted,



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